NOTES ON LEPIDOPTERA AND HYMENOPTERA

By Fred M. Schott
Brooklyn, N. Y.

Hemerophila pariana Clerck.

This European moth, first reported by Dr. E. P. Felt in 1917 from Westchester County, N. Y., and the subject of a detailed bulletin by Porter and Garman,—No. 246 Apple & Thorn Skeletonizer, Conn. Agr. Exp. Sta., Feby., 1923, has found its way into northeastern New Jersey, where it is now well entrenched.

During August the writer had occasional opportunity to observe the insect at Nutley in Essex County, where there appeared a rather severe outbreak in an apple orchard. It was also noted in Passaic Co., at Haledon and, by Dr. M. D. Leonard, about Pompton. In Bergen Co. it occurs at North Hackensack, River Edge, Oradell, Spring Valley section and Rutherford (1 specimen). The most southerly points were Irvington and West Orange, Essex County. In going over material collected earlier in the season I discovered a single specimen from Central Park, Long Island, N. Y., dated April 20, 1924. It would seem, then, that the species may ultimately spread over a considerable area in the East.

On August 6th, at Nutley, the adults were awing in numbers. They have an erratic manner of flight, not long sustained, and may be recognized at a distance by the characteristic posture when at rest. The wings are held partly upraised at a ready-to-go-angle. Those raised from cocoons were mostly of the typical color, dark reddish-brown with a suggestion of purplish and with patches of grayish at the costal margins. Others varied to the extent of having the gray markings spread more or less across the wing.

The green, black-tubercled larvae were almost all full grown (about ½ inch) on this date. They are active, when disturbed, "shimmie" like a burlesque comedienne, and will thrust themselves into space on a silken thread, after the manner of many

other caterpillars. While usually there is spun a single cocoon along the midrib, many leaves had attached three or more, both on the upper and lower sides, often in the curls produced at the tip and sides by the feeding larvae. Individuals sometimes migrate and spin cocoons on an uninjured leaf.

Leaves with larvae were gathered and put into jars on August 6. These emerged between the 13th and 18th. From cocoons gotten on the 18th the moths emerged 25th to 30th. The pupal shell remains well extruded from the end of the case after the adult has emerged. Fortunately the progress of this species is beset with greater difficulties than has been the case with most other pests of foreign origin. It is readily amenable to arsenical reasoning.

From the cocoons were bred, a Chalcidoid parasite, *Dibrachys boucheanus,* Ratz.,[1] (a tent caterpillar enemy) and *Epiurus indagator,* Cress.,[2] (Ichneumoninæ). Five other hymenopterous species appeared—*Itoplectis conquisitor* Say[2] (Ichnemoninæ), *Triclistus curvator* Fab.,[2] (Tryphoninæ), a Pteromalid, and a *Horismenus* species[1] (Chalcidoidæ). A cluster of curious black cases, about one-eighth inch long, set on end about the midrib near a cocoon, brought to light a number of chalcidoids, *Comedo anomocerus* Crawford.[1]

As the writer does not know definitely whether there is any parasitic connection between these five and any stages of *Hemerophila,* they are given only as a matter of record. The list of parasites in the report of Porter and Garman mentions several others, both hymenopterous and dipterous. Furthermore, there was in this orchard another controlling factor scarcely less interesting than the list of discovered parasites. Hemiptera of the genus *Sinea* were present in numbers and feeding on the larvæ. Two specimens taken proved to be *Sinea spinipes* H. S. While these reduviids are of general distribution and not uncommon in this region, their extraordinary abundance on the trees makes very tempting the assumption that they were attracted

[1] Det. by A. B. Gahan.

[2] Det. by R. A. Cushman.

solely by the *Hemerophila* caterpillars. Often, upon turning over a leaf fold to look for larvæ, there would be, instead, a *sinea,* wearing an "expression" that, under the circumstances, I may be pardoned in terming "pleasurable satisfaction."

As the common name of "Apple & Thorn Skeletonizer" is considered unsatisfactory, the writer takes the liberty of suggesting "Flit Moth" or "Apple Flit Moth," from the above-described manner of holding its wings when resting.

Tortrix pallorana Rob.[3]

On July 31 considerable damage was being done to rose foliage at Murray Hill, N. J., by the larvæ of this species. It is a leaf-rolling insect and its work resembles that of the common rose pest *Cacœcia rosaceana* Harris. The caterpillar is a bluish-green, about three quarters of an inch long, and has on the hind dorsal surface a conspicuous yellow patch. From larvæ collected there was raised an Ophionid parasite, *Campoplex ferrugineipes* Ashm.[2]

Olethreutes habesana Wlk.[3]

The small light colored larvæ of this elegantly marked Tortricid were found infesting the terminal shoots of the false dragon head, *Physostegia* sp., causing a withering and blackening of the foliage. Those raised, pupated in the folds of the leaves, which would seem to indicate that the larva leaves the burrow in the stem when ready to change. The moths emerged from cases that had been pushed almost entirely out of the fold before emergence. This species is recorded by Smith as feeding on a variety of plants, such as Mullein, Gerardia and Verbena.

Olethreutes hemidesma Zell.[3]

The galleries of this were abundant on *Spiræa* in the vicinity of Rutherford in August. Often a number of the terminal leaves were rolled along the stem, making chambers four or five inches in length. Dozens of the galleries might have been taken from a single shrub. The larva is about one half inch in length, has a brown head and thoracic shield. The segments are black

[3] Det. by August Busck.

and bear rather large white tubercles. From them, collected on August 7th, adults emerged on the 20th. A species of *Epiurus*[2] (Ichneumoninæ) was obtained.

Erannis tilaria Harr.

In place of the usual fall incursion of the cotton moth, *Aletia argillacea* Hbn., this species has descended upon New York City and environs in great numbers this year. Seems to have voluntarily lent itself as an external decoration to every store window.

STATISTICAL METHOD AND ENTOMOLOGY

Of late there appears to be a tendency on the part of some entomologists, particularly economic ones, to utilize statistical method as a means of interpreting entomological data. There is no doubt concerning the validity of such a procedure and the tendency should be encouraged. However it should be remembered that where the premises are doubtful, the conclusion must be tentative and mathematical methods should not be used to give a false accuracy or an appearance of reconditeness to the work.

Professor Arne Fisher in his review (Jour. Amer. Statis. Assoc. vol. XIX, pp. 413–418, 1924) of the "The Calculus of Observations" by Whittaker and Robinson calls attention to the numerous workers in different branches of learning who are busily engaged in calculating coefficients of correlation between all sorts of phenomena. He is of the opinion that these are wasted efforts and states that "Jörgensen, in his great work on Frequency Surfaces and Correlation, has declared that the concept of correlation is as yet in a nebulous state and that it will take the diligent, meticulous and serious labors of many mathematicians to build even a firm basis for the theory." Fisher states that Whittaker's chapter on this subject confirms the view of Jörgensen and advises statisticians to wait until the mathematicians have reduced the concept to a more solid basis.

Ed.